

AQUATIC PLANT MANAGEMENT PLAN
FOR
U.S. ARMY CORPS OF ENGINEERS, SAVANNAH DISTRICT
WATER RESOURCES PROJECTS
SOUTH CAROLINA AND GEORGIA

Appendix A

CY 2010 Update

Annual Aquatic Plant Treatment Plan

and

Summary of Previous Year's
Management Program

Aquatic Plant Treatment Plan CY 2010

New Savannah Bluff Lock and Dam

Periodic observations will be conducted to determine plant species, abundance, and distribution during the summer of 2010. Aquatic plants may be treated in the vicinity of the New Savannah Bluff Lock and Dam (NSBLD) using an appropriate plant specific herbicide whenever plant abundance has the potential to impact the operations of this facility. The Savannah District does not have the authority to perform aquatic plant management treatments beyond the boundaries of the NSBLD. Herbicide applications immediately upstream of the NSBLD will not reduce the water hyacinths' continued impacts to the boat ramp, courtesy dock, and buoy line since the source of the infestation extends well upstream of the area. As an alternative to herbicide applications, the upstream buoy line may be modified or temporarily removed to prevent the accumulation of water hyacinth on the buoy line.

J. Strom Thurmond Lake

The persistent drought from 2006 through September 2009 has greatly reduced the abundance of hydrilla. The lake level remained four to six feet below normal pool level for most of the 2009 growing season. Plant growth varied greatly from area to area. In many areas with adequate water depth, the hydrilla seldom exceeded three feet in height and was not problematic during the peak of the recreation season. Due to the unpredictable plant growth during the last five growing seasons and uncertainty as to the lake level next year, a list of proposed treatment areas has not been developed. The J. Strom Thurmond Project staff will monitor hydrilla growth beginning in May. By mid to late July, treatment needs will be identified with the intent of completing treatments prior to Labor Day. The treatment plans will be coordinated with the GADNR, SCDNR, local agencies, and affected outgrantees prior to implementation.

Treatment priorities will be established in accordance with the Aquatic Plant Management plan for U.S. Army Corps of Engineers, Savannah District Water Resources Project, South Carolina and Georgia (APMP). The APMP is available on the Thurmond Project website: <http://www.sas.usace.army.mil/lakes/Thurmond/AquaticPlan.pdf>. Either Reward with K-TEA or Komeen with Reward will be applied dependant upon site location, desired level of control, and cost per acre. It is anticipated that only one herbicide application per area will be made in CY 10.

Approximately 200 water hyacinth plants were found in the Clarks Hill Park area of J. Strom Thurmond Lake during September 2008. The plants were removed by hand from the reservoir. No water hyacinth plants were found in 2009. The lower portion of J. Strom Thurmond Lake from Little River, GA to the dam will be monitored for water hyacinth throughout the 2010 growing season. Plants will be removed and disposed of or treated with appropriate aquatic plant herbicides depending upon the extent of infestation. Treatment(s), if necessary, will be coordinated with the GADNR, SCDNR, local agencies, and affected outgrantees prior to implementation.

Adjoining property owners and other agencies may treat additional hydrilla infestations in accordance with the APMP.

A large population (approximately 600-acres) of slender pondweed (*Potamogeton pusillus*) was present in the Savannah River headwaters of J. Strom Thurmond Lake (RBR tailwater) in 2008. The abundance of this plant appeared to be in direct response to drought conditions and falling water levels in J. Strom Thurmond Lake. The plant proved to be problematic for pumped storage operations at Richard B. Russell Dam. Large floating mats of the plant were entrained on the pumped storage unit bar screens that are designed to exclude fish from being entrained. Many man-hours were required to physically remove plants from the screens to prevent the restriction of water flow through the pumped storage units. In 2009, 81.2 acres of slender pondweed were treated with Reward and Komeen. Intensive surveys will be conducted during the 2010 growing season, and dependent upon water levels, plant growth, and plant abundance, herbicide treatments may be required. Selection of appropriate chemicals, acreage treated, and the timing of treatments will be determined by assessing the distribution and abundance of the plants.

Richard B. Russell Lake

Surveys conducted in 2009 revealed less than 1-acre of hydrilla in the Bond Creek tributary of Richard B. Russell Lake. Hydrilla was first discovered in Richard B. Russell Lake in the McCalla peninsula area during summer 2002 but has not reoccurred at this location since this time. Approximately one-acre of hydrilla was discovered in Bond Creek, a tributary of the Savannah River arm of Richard B. Russell Lake, in January, 2007. This area has been surveyed annually since 2007, but the hydrilla has not increased in distribution or abundance. Surveys in 2009 also revealed a reduced abundance and distribution of Brazilian elodea in areas where it had been located in previous years. Approximately 5-10 acres of Brazilian elodea are still present in the Savannah River within 1 to 5 miles downstream of Hartwell Dam. Boat surveys will be conducted periodically throughout the summer and fall of 2010 to determine plant distribution and abundance. Most rangers at the Richard B. Russell Project have been trained to identify and report aquatic plants of concern that would be expected to occur in this area. No treatment is currently planned for 2010.

Hartwell Lake

Aquatic plants have not become abundant in Hartwell Lake. Therefore, no treatment program is planned for CY 10. However, there is concern that hydrilla will be moved from J. Strom Thurmond Lake or Keowee Lake into Hartwell Lake. In an effort to identify the spread of hydrilla as early as possible, boat surveys will be conducted periodically throughout the summer and fall. The water level in Hartwell Lake increased approximately 22 feet from Dec 2008 to the Sep 2009, likely making the establishment of new populations of aquatic plants difficult. Most rangers at the Hartwell Project have been trained to identify and report aquatic plants of concern that would be expected to occur in this area. Additionally, the Lake Hartwell Association membership has agreed to report any aquatic vegetation observed.

If hydrilla is located in Hartwell Lake, it is the intent of the Corps of Engineers to treat all known hydrilla infestations during CY 10 using herbicides to minimize the spread of hydrilla within the impoundment. However, if significant infestations are located before scheduled treatment, all treatment areas will be prioritized based on criteria established in the APMP.

Aquatic Plant Management Activity Summary CY 2009

New Savannah Bluff Lock and Dam (NSLBD)

Aquatic plant populations in the upstream embayment were monitored periodically throughout the growing season. The following aquatic plants were identified: waterhyacinth, elodea, fanwort, pickerelweed, and cattail. Water hyacinth (a floating invasive species) was somewhat problematic at the NSBLD again this summer. In August, plants began floating downstream and accumulating on the upstream buoy line. However, periodic high stream flows due to locally heavy rains reduced the need to manually remove the plants from the buoy line.

J. Strom Thurmond Project

The growth rate and distribution of hydrilla was monitored from May through October. Throughout most of the growing season, the lake level was 4 to 6 feet below normal summer pool. All designated beach areas and some boat ramps were not usable during most of the summer. The abundance of hydrilla varied greatly from area to area.

Hydrilla adjacent to the following boat ramps and within the following marina basins was treated in order to minimize user impacts:

Treatment Area	Acres	Herbicide and Application Rate
Camp Knox (BSA Camp) Ramp	0.5	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Chamberlain Ferry, GA Ramp	0.4	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Cherokee Recreation Area Ramp	1.5	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Clarks Hill Park Ramp	0.6	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Clay Hill Campground Ramp	1.0	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Dordon Creek Ramp	0.7	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Double Branches Ramp	0.9	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Elijah Clark State Park Ramp	1.0	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Ft Gordon Recreation Area Ramp	0.4	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Hamilton Branch State Park Ramp	1.3	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Hickory Knob State Park Ramp	1.0	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Hickory Knob Subdivision Ramp	0.5	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Holloway Ramp	0.8	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Keg Creek Ramp	0.3	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Landam Creek Ramp	0.5	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Little River Marina Ramp	4.0	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Mistletoe State Park Ramp	1.2	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
New Bordeaux Subdivision Ramp	0.5	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Raysville Marina	2.5	Komeen - 16 gal/ac & Reward - 0.5 gal/ac

Treatment Area (con't)	Acres	Herbicide and Application Rate
Rousseau Cr. Subdivision	0.5	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Savannah Lakes Marina Basin	0.5	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Tradewinds Marina Basin	0.9	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Wildwood Park Ramp	1.8	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Winfield Subdivision Ramp B	0.5	Komeen - 16 gal/ac & Reward - 0.5 gal/ac
Total	23.8	

Giant reed (*Arundo donax* L.) was found on a natural beach between the Visitors Center and Clarks Hill Park. It has also been present on a small island in Soap Creek for many years. Both plant populations (less than 0.2 ac. combined) were treated with Rodeo in mid September.

Seven permits were issued to adjoining property owners to treat hydrilla around their docks. A total of 14.8 acres was treated. One permit was issued to treat alligator weed (0.3 ac.) All herbicide applications were made by a licensed applicator using herbicides approved for the treatment of hydrilla.

In August 2009, 81.2 acres of slender pondweed were treated with Reward and Komeen in the area of J. Strom Thurmond Lake immediately downstream of the Richard B. Russell Dam.

During mid October, inspections of the shoreline areas were made in areas where hydrilla had not been previously found. The lake level had risen almost five feet from the summer low point. As a result, finding newly established plant populations very difficult. An additional 38 acres of hydrilla was located in the following locations:

Location	County	State
Savannah River between Hwy 378 and Hickory Knob State Park	McCormick	SC
Little River, SC between Hwy 378 and Baker Creek State Park	McCormick	SC

Since its initial establishment in J. Strom Thurmond Lake, hydrilla has been detected along approximately 7,327 acres of shoreline, including approximately 409 miles of shoreline in Georgia (4,953 ac.) and 196 miles of shoreline in South Carolina (2,374 ac.). These estimates are based on the presence of infestations noted since the introduction of hydrilla and the annual survey of areas not previously impacted by hydrilla to determine the presence of additional infestations. The estimate also assumes that once the lake level returns to normal for several growing seasons, hydrilla will become reestablished in all areas of suitable habitat. This represents approximately 10.3 % of the total lake surface at normal summer elevation of 330' msl that may be impacted once the lake returns to normal level.

Hydrilla is present in areas of suitable substrate throughout Little River, GA from the confluence of the Savannah River to upstream of Raysville Campground including most tributaries. Along the Savannah River portion of the lake, hydrilla is present from the dam to Murray Creek Peninsula in Georgia and from the dam to Hickory Knob Subdivision in South

Carolina including most tributaries. Hydrilla was found along both sides of Little River, SC from the Savannah River to Highway 378. A small amount of hydrilla was found adjoining Baker Creek State Park. Maps showing the known locations of hydrilla infestations are on file at the J. Strom Thurmond Lake Operations Project Manager's Office and are posted on the J. Strom Thurmond Project website.

On September 2, 2008, approximately 200 waterhyacinth plants were found in Scotts Creek near Clarks Hill Park, McCormick County, SC. All plants were collected and disposed of. Periodic surveys of the area were made throughout of the 2009 growing season. No additional water hyacinth was found.

Richard B. Russell Project

Periodic boat surveys of the lake were performed throughout the growing season. Sparse patches of Brazilian Elodea (*Egeria densa*) were present on the Savannah River 1 to 5 miles below Hartwell Dam. Less than one acre of hydrilla was present in Richard B. Russell Lake in the Bond Creek area during the 2009 growing season. Aquatic plant growth has not reached nuisance levels requiring treatment.

Hartwell Project

Periodic boat surveys of the lake were performed throughout the growing season. The distribution and abundance of water primrose in Eighteen Mile Creek does not appear to have increased relative to previous years.